

ITRAC-3 Nuclear Science Training Course with NUCLEONICA

13 - 17 May 2011 Karlsruhe

Çiğdem İÇHEDEF



Ege University
Institute of Nuclear Sciences



- 1999-2003 Bsc in Department of chemistry, Faculty of Science, Ege University
- 2003-2005 Msc in Department of Nuclear Applications, Institute of Nuclear Sciences, Ege University
- 2005-2010 PhD in Department of Nuclear Applications, Institute of Nuclear Sciences, Ege University

Research interest of our group is;

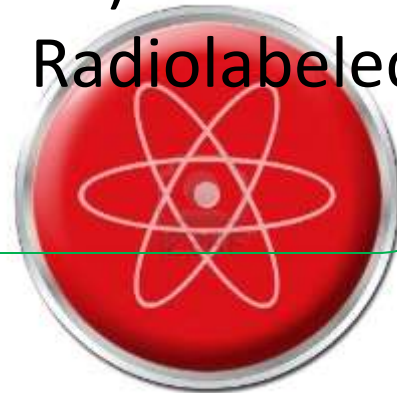
- Radioactive iodine-131 and technetium-99m chemistry,
- Design and synthesize of radiopharmaceuticals which are labeled with these radionuclides,
- Quality controls of radiopharmaceuticals,
- In vivo and in vitro applications of radiopharmaceuticals,
- dosimeter and microdosimeter studies for radionuclides which are using in nuclear medicine,
- counting stability constants of actinit complexes,
- designing and developing microcontroller aided radiation detection and dose measurement systems.

Msc thesis

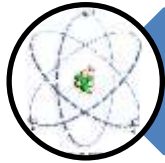
«Investigation of A New Bifunctional Chelating Agent:
D-Penicillamine»

- PhD thesis

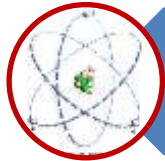
«Preparation of Magnetic Nanoparticles of Guanine
Radiolabeled With $M(\text{CO})_3^+$ ($M=^{99\text{m}}\text{Tc}$ an Re) Core and
Examination of Biological Activity of Radiolabeled
Complex»



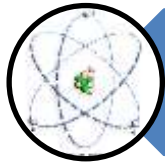
My research interests



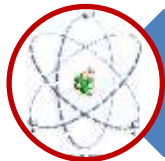
Broad-based interdisciplinary study in radiolabeling of drugs and some molecules with I-131 and Tc-99m,



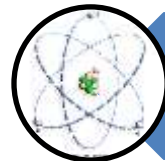
Magnetic nanoparticle synthesis methods



Radiolabeling of nanoparticles with Tc-99m



Radiochemical purity analyses



in vivo/ in vitro studies



Publications

- F. Z. B. Muftuler, I. Demir, P. Unak, Ç. İçhedef, A. Yurt Kilcar, Bioavailability of ^{99m}Tc -paclitaxel-glucuronide (^{99m}Tc -PAC-G), *Radiochimica Acta*, 99, 1-6 (2011)/DOI 10.1524/ract.2011.1827.
- T. Sismanoglu, S. Teksoz, and C. İçhedef, Leucine Complexes with Cerium: Stability Constants and Thermodynamic Parameters, *J. Chem. Eng. Data*, 56, 978–983, 2011.
- F. Z. B. Muftuler, P. Unak, C. İçhedef, İ. Demir, Synthesis of a radioiodination antiestrogen glucuronide compound (TAM-G), *J Radioanal Nucl Chem.* 287, 679-689, 2011.
- I. Demir, F. Z. B. Muftuler, P. Unak, C. Acar, In vivo Investigation of Radiolabeled Bevacizumab in Healthy Rat Tissues, *Brazilian Archives of Biology and Technology*, 54, 1, 73-79, 2011.
- R. Yeşilağaç, P. Unak, E. İ. Medine, C. A. İçhedef, T. Ertay, F. Z. B. Muftuler, Enzymatic synthesis of $^{125}/^{131}\text{I}$ labelled 8-hydroxyquinoline glucuronide and in vitro/in vivo evaluation of biological influence, *Applied Radiation and Isotopes* 69, 299–307, 2011.
- F. Z. B. Muftuler, P. Unak, S. Yolcular, A. Yurt Kilcar, C İçhedef, H. Enginar, S. Sakarya, Synthesis, Radiolabeling and In Vivo Tissue Distribution of an Anti-Oestrogen Glucuronide Compound, ^{99m}Tc -TOR-G, *Anticancer Research*, 30, 1243-1250, 2010.
- U. Avcıbası, H. Demiroğlu, P. Unak, F. Z. B. Muftuler, C. A. İçhedef, F. G. Gumuser, In vivo biodistribution of ^{131}I labeled bleomycin (BLM) and isomers (A2 and B2) on experimental animal models, *J Radioanal Nucl Chem* 285:207–214, 2010
- S. Teksöz, Ç. A. İçhedef, P. Ünak, [Complexation Behavior of Guanine with \$\text{Th}^{4+}\$, \$\text{UO}_2^{2+}\$, and \$\text{Ce}^{3+}\$ at Various Temperatures](#), *J. Chem. Eng. Data*, 55, 2077-2083, 2010.

- S. Teksöz, Ç. Acar, P. Ünak, Hydrolytic behavior of Th^{4+} , UO_2^{2+} , and Ce^{3+} Ions at variable temperatures, J. Chem. Eng. Data, 54 (1), 1183-1188, 2009.
- A. Yurt, F. Z. B. Muftuler, P. Unak, S. Yolcular, C. Acar, H. Enginar, Synthesis of a Novel Antiestrogen Radioligand ($^{99\text{m}}\text{Tc}$ -TOR-DTPA), Cancer Biotherapy & Radiopharmaceuticals, 24, 6, 707-716, 2009.
- C. Acar, S. Teksoz, P. Unak, F.Z. Biber Muftuler, E.İ. Medine, The Influence of Stereoisomerism on Biologic Behavior of $^{99\text{m}}\text{Tc}$ Labeled Penicillamine, - Journal of Radioanalytical and Nuclear Chemistry, 280, 2, 375-380, 2009.
- P. Unak, S. Teksoz, F. Z. Biber Muftuler, E. I. Medine, C. Acar, Y. Yurekli, $^{99\text{m}}\text{Tc}$ -glucoheptonate-guanine: Synthesis, biodistribution and imaging in animals Journal of Radioanalytical and Nuclear Chemistry, Vol. 275, No.2 379–385, 2008.
- F.Z. Biber Muftuler, P. Unak, S. Teksoz, C. Acar, S. Yolcular, ^{131}I Labeling Of Tamoxifen And Biodistribution Studies In Rats - Applied. Radiat. Isot, 66, 2, 178-187, 2008.
- Ç. Acar, S. Teksöz, P. Ünak, F. Z. Biber Müftüler, Investigation Of New Bifunctional Agents: D-Penicillamine, - Journal of Radioanalytical and Nuclear Chemistry, 273(3) 641-647, 2007.
- Ç. Acar, S. Teksöz, P. Ünak, F. Z. Biber Müftüler, E. İ. Medine, Somatostatin With $^{99\text{m}}\text{Tc}$ And Biodistribution Studies On Rats, - Cancer Biotherapy and Radiopharmaceuticals, 22, 6, 748-754, 2007.
- F. Yurt Lambrecht, K. Durkan, Y. Yıldırım, Ç. Acar, Labeling of Acetaminophen with I-131 and Biodistribution in Rats, Chem. Pharm. Bull., 54(2), 245-247, 2006.